

AWM Student Chapter
invites you to our

SYMMETRY AND BEADING WORKSHOP

Date: Wednesday, February 11th

Time: 4:30 – 5:30 p.m.

Place: LCB 222

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At its most fundamental level, mathematics is the search for patterns in the world, whether it is the physical world or the abstract mathematical world. Something deep inside us draws us to patterns – their repetition and predictability within the chaos of the universe is comforting and beautiful. This force drawing us to order does not act uniquely on mathematicians – all people are drawn to patterns, whether or not they interpret them as something mathematical. The joy of being a mathematician is that we can get the same satisfaction from mathematical patterns as we do from physical ones. In this workshop, we will explore both mathematical and physical patterns by looking at symmetry groups of beads. We'll start by introducing a purely mathematical problem – classifying finite subgroups of the orthogonal group $O(3)$. These groups are what we call finite point groups, and their classification has a satisfying simplicity. Then, we will physically realize each of these groups as the group of symmetries of a “beaded bead,” which is a cluster of beads woven together. We will see examples of beaded beads displaying every type of finite point symmetry, then we will create our very own beaded bead displaying tetrahedral symmetry. This workshop will be interactive and accessible to mathematics students of any level.